

METHOD AND APPARATUS FOR FINE FREQUENCY SYNCHRONIZATION IN  
MULTI-CARRIER DEMODULATION SYSTEMS

ABSTRACT

A method and an apparatus relate to a fine frequency synchronization compensating for a carrier frequency deviation from an oscillator frequency in a multi-carrier demodulation system 130 of the type capable of carrying out a differential phase decoding of multi-carrier modulated signals, the signals comprising a plurality of symbols 200, each symbol being defined by phase differences between simultaneous carriers 202 having different frequencies. A phase difference between phases of the same carrier 202 in different symbols 200 is determined. Thereafter, a frequency offset is determined by eliminating phase shift uncertainties corresponding to codeable phase shifts from the phase difference. Finally, a feedback correction of the carrier frequency deviation is performed based on the determined frequency offset. Alternatively, an averaged frequency offset can be determined by averaging determined frequency offsets of a plurality of carriers 202. Then, the feedback correction of the frequency deviation is performed based on the averaged frequency offset.

00673270 112900